



8 TRACK RECORDER DECK

MODEL TRQ-134D

SERVICE MANUAL

No. 430

1972

SPECIFICATIONS

IC

IC1	FA-6013D	Pre Amp.
IC2	FA-6013D	AF Amp.
IC3	FA-6013D	Pre Amp.
IC4	FA-6013D	AF Amp.

TRANSISTORS

TR1	2SC1213	Bias osc.
TR2	2SC1213	

DIODES

D1	VO-6A	Rectifier
D2	VO-6A	
D3	VO-6A	
D4	VO-6A	
D5	WO-6A	Nois Eliminator
D6	WO-6A	Impulse Eliminator
D7	WO-6A	Impulse Eliminator
D8	WO-6A	Switching
D9	1N34A	Rectifier (for Level meter)
D10	1N34A	
D11	1N34A	Rectifier (for Level meter)
D12	1N34A	

D13	VO-6A	Switching
D14	WO-6A	
D15	WO-6A	
D16	WO-6A	

TAPE SPEED	3 $\frac{3}{4}$ ips (9.5cm/s)
CARTRIDGE	8 track stereo
TRACK SYSTEM	8 track 2channel 4program
PROGRAM	Automatic and Manual push button
RECORDING SYSTEM	AC bias
ERASING SYSTEM	AC erase
FREQUENCY RANGE	50~10,000Hz
OUTPUT VOLTAGE	750mV
OUTPUT IMPEDANCE	5 K ohm or less
POWER SUPPLY	120V, 60Hz (for USA) 115V/230V 50/60Hz (for Europe)
POWER CONSUMPTION	25W (Max. 60W)
DIMENSIONS	4 $\frac{3}{16}$ " (H) × 15 $\frac{3}{4}$ " (W) × 11" (D) (11 × 40 × 28cm)
WEIGHT	12 lbs. 2 oz. (5.5kg)

ACCESSORIES

Patch cord (5740543)	2
Head cleaning stick (7716481)	1

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CONTROLS

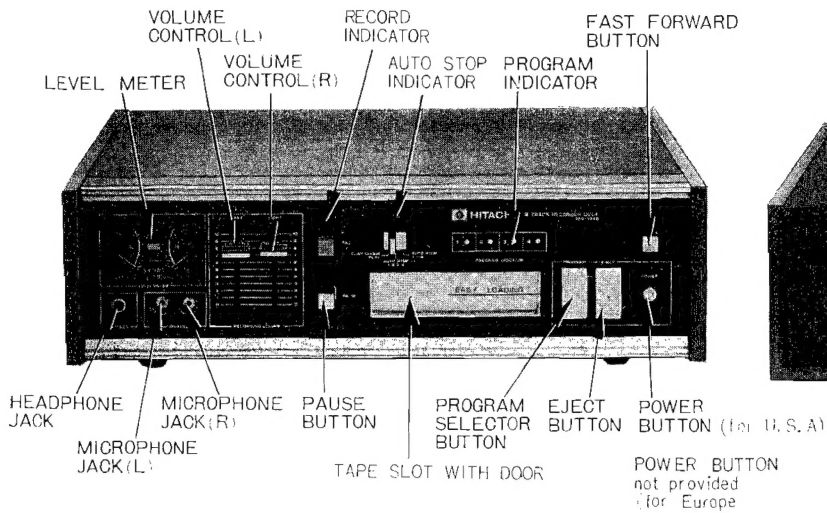


Fig. 1

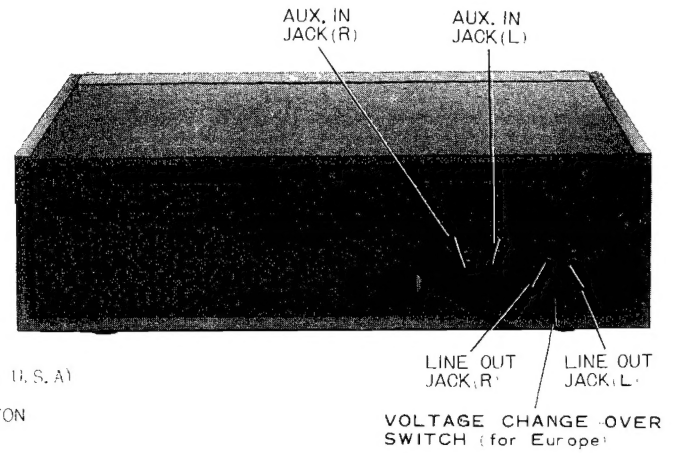


Fig. 2

BLOCK DIAGRAM

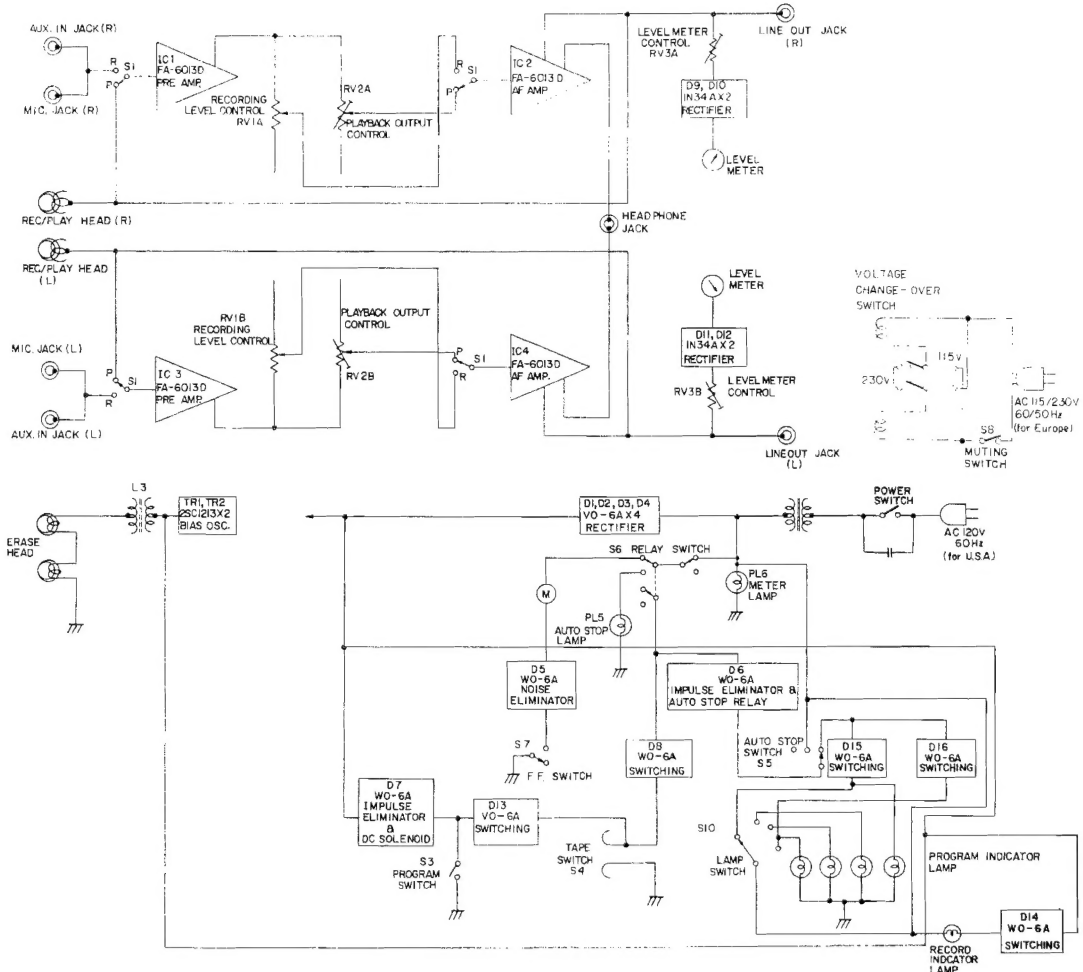
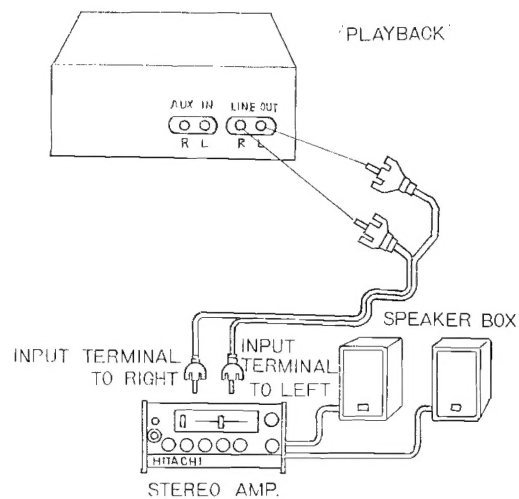
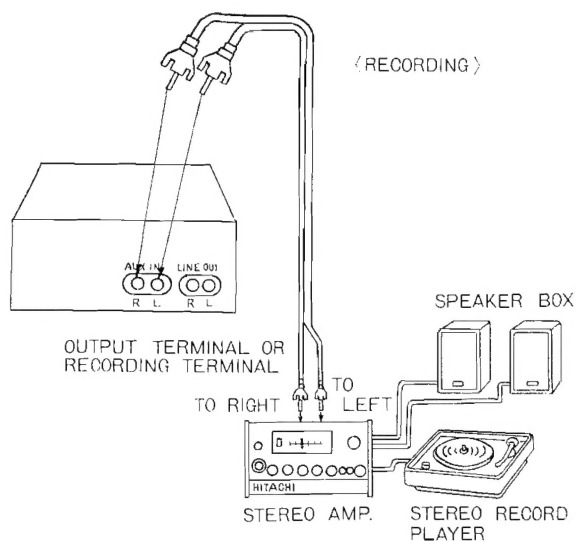


Fig. 3

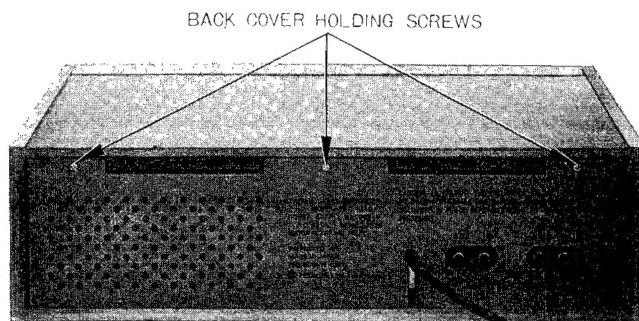
CONNECTION



DISASSEMBLY

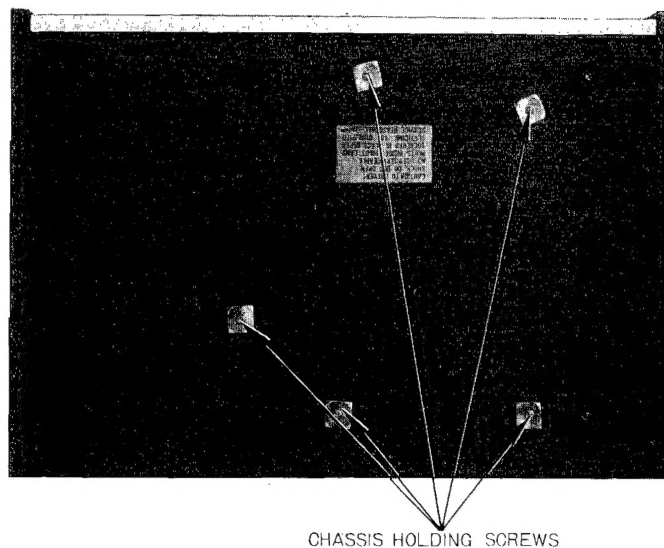
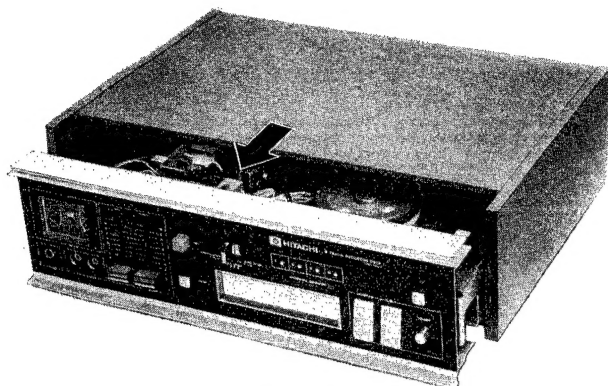
1. Removal of back cover

Remove three screws holding back cover as shown in Fig. 6.



2. Removal of chassis

Remove five screws holding chassis as shown in Fig. 7. Remove chassis in the direction of arrow as shown in Fig. 8.



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3. Removal of circuit board

Remove four screws holding circuit board as shown in Fig. 9 and remove two screws holding power circuit board as shown in Fig. 10.

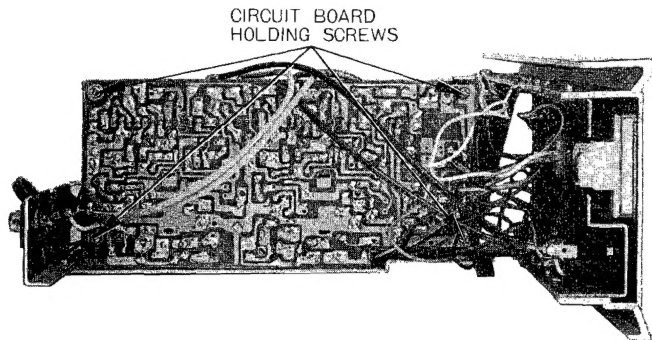


Fig. 9

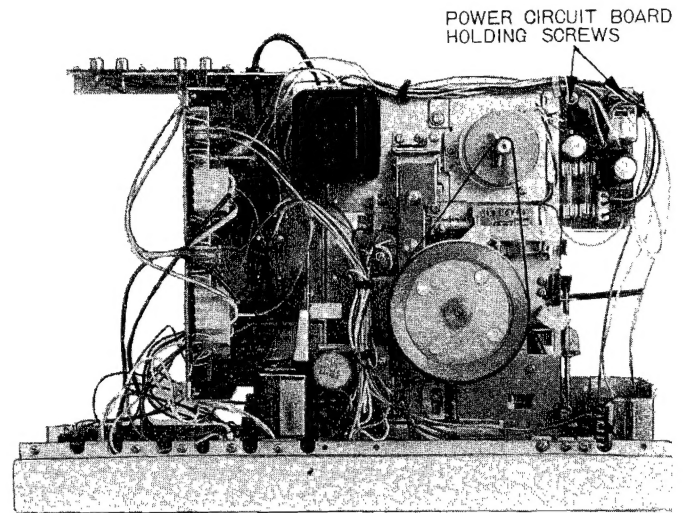


Fig. 10

LUBRICATION

One or two drops of machine oil may be applied to the point **Ⓜ** (rotating parts). Grease may be applied to the sliding surfaces **ⓐ** as shown in Fig. 11.

Ⓜ : Machine oil

Ⓔ : Grease

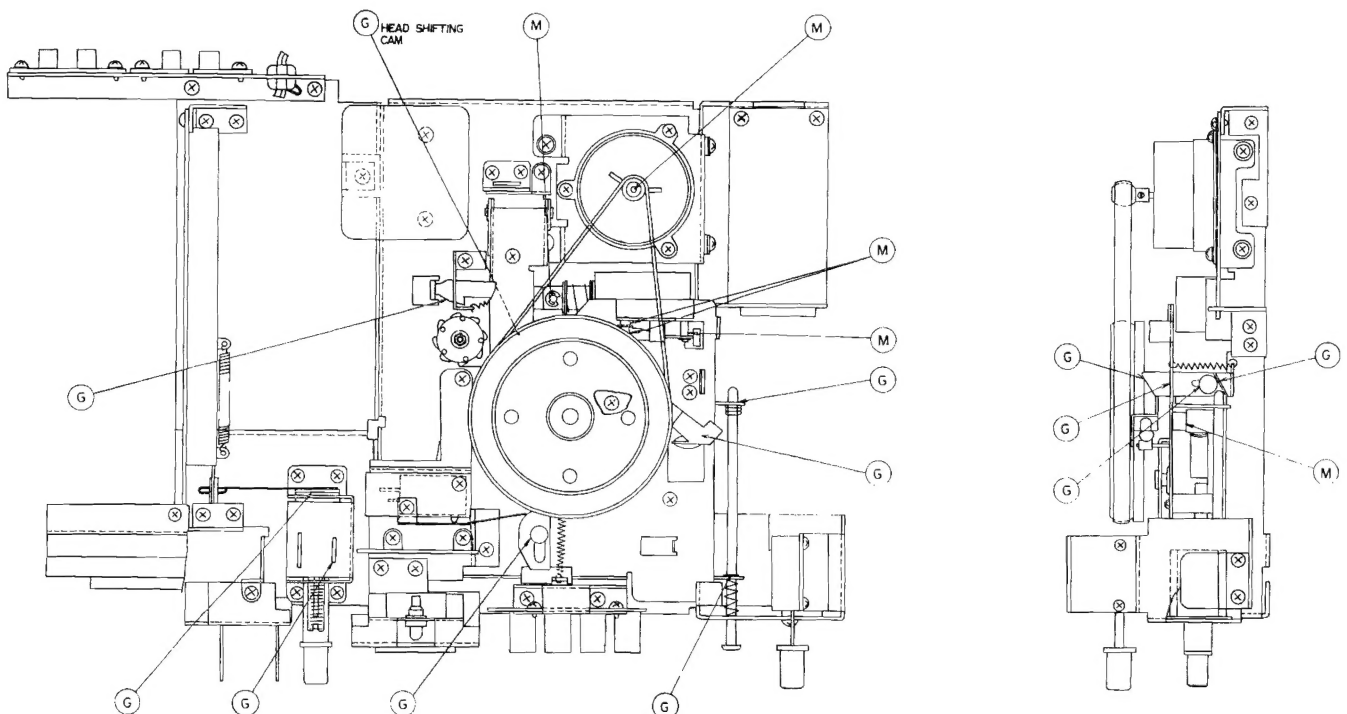
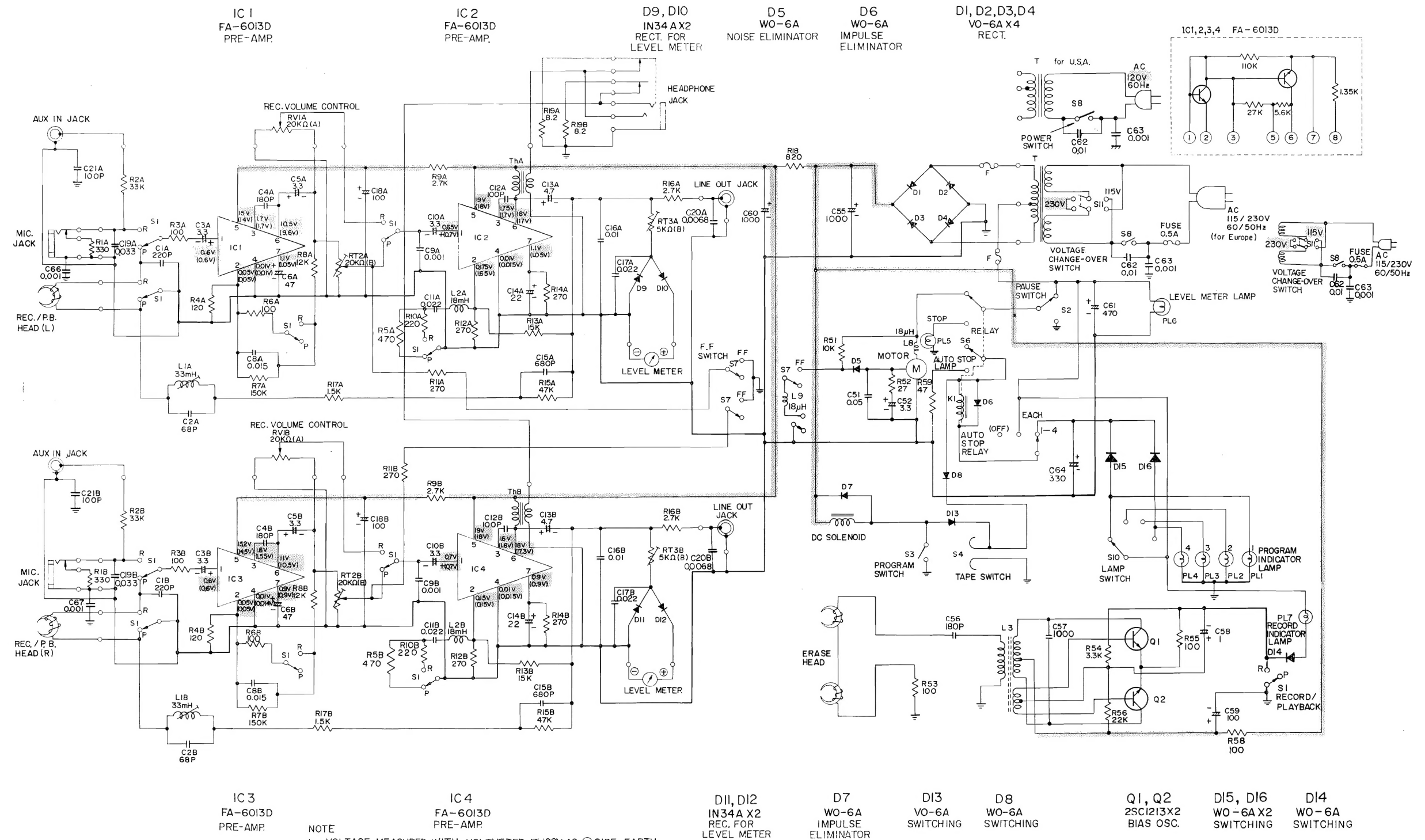


Fig. 11

CIRCUIT DIAGRAM



INSPECTION AND ADJUST OF MECHANICAL UNIT

1. INSPECTION OF TRANSFORMER SUPPORT PLATE AND TRANSFORMER

When the transformer support plate and the transformer are installed on the chassis there should be no gap between transformer support plate and chassis. The gap between transformer and chassis shall be between 0 and 0.5mm.

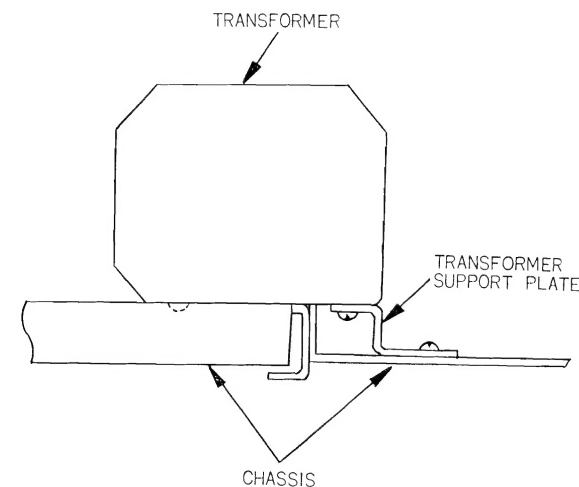


Fig. 12

2. INSPECTION OF HEAD SHIFTING CAM AND CAM SPRING

- (1) Rotate the head shifting cam and assure that the tip of the CAM SPRING is fitted in an notch of the cam without fail.
- (2) Adjust the CAM SPRING retaining screw so that the clearance between the head shifting cam and the tip of the moderation spring is between 0.2mm and 0.6mm.

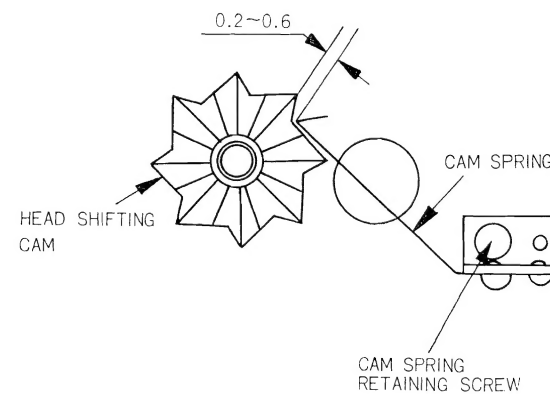


Fig. 13

3. INSPECTION OF FLYWHEEL AND MOTOR PULLEY

Adjust the motor pulley if the centers of the flywheel and motor pulley are slip out under a state where a flat

belt is fitted. The slip out of centers of flywheel and motor pulley shall be within 0.3mm.

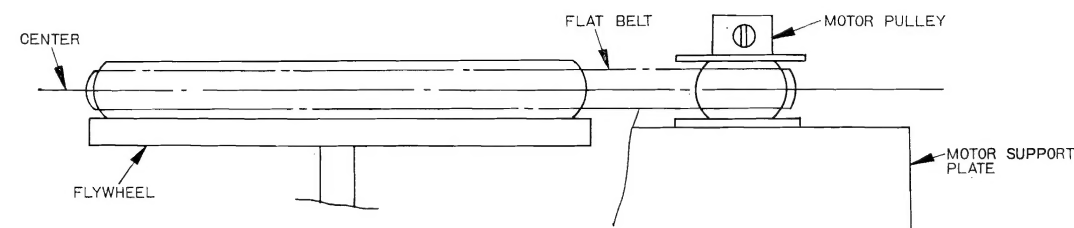


Fig. 14

4. INSTALLATION AND INSPECTION OF MECHANISM PLATE

When installing the mechanism plate assembly, tighten set screw A so that the distance to the chassis is $22.9\text{mm} \pm 0.05\text{mm}$.

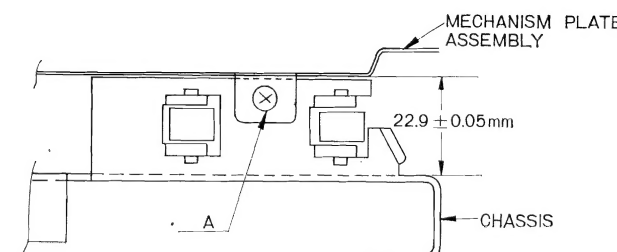


Fig. 15

5. INSPECTION OF HEAD SHIFTING PLATE ASSEMBLY AND OF HEAD SHIFTING CAM

- (1) When installing the HEAD SHIFTING PLATE ASSEMBLY to the chassis, adjust the tapping screw A so that the tip of the adjusting screw comes to the center of the shaded area in Fig. 16.
- (2) After installation assure that dimension H shown in Fig. 17 is 33.5mm. Also assure that deflection of the head shifting plate spring under this state is 2mm.

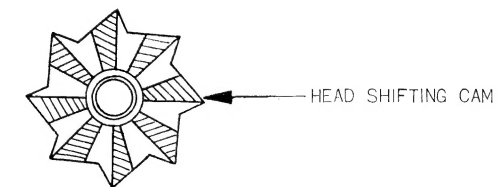


Fig. 16

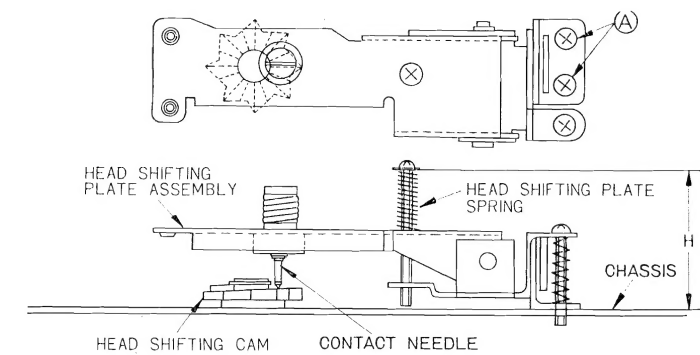


Fig. 17

6. ADJUSTMENT OF HEAD ANGLE

Playback a standard tape for correction of angle and adjust the angle adjusting screw A so that the output is maximum. Place the head in the height of the center of the tape width when adjusting.

7. ADJUSTMENT OF TRACK POSITION

Playback track No. 4 (head is located at the bottom position) of a standard tape for correction of track position by channel 1 (LH amplification) and adjust the height adjusting screw B so that the output is maximum. To perform the above job correctly, use a test cartridge No. 321 made by RCA and playback track No.2 and track No. 6 (2 ch). Adjust the height adjusting screw B so that the output 1 KHz of LH amplification playing track No. 2 is minimum. Then adjust the angle adjusting screw A so that the output 8 KHz of RH amplification playing track No. 6 is maximum.

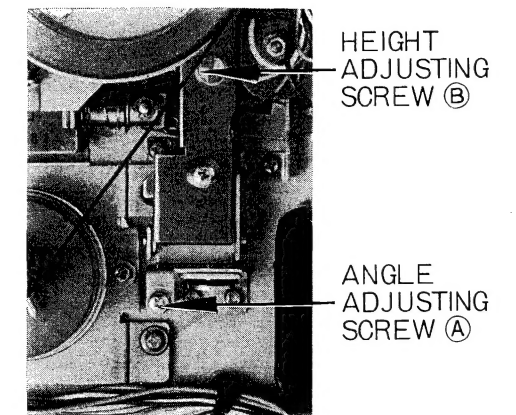
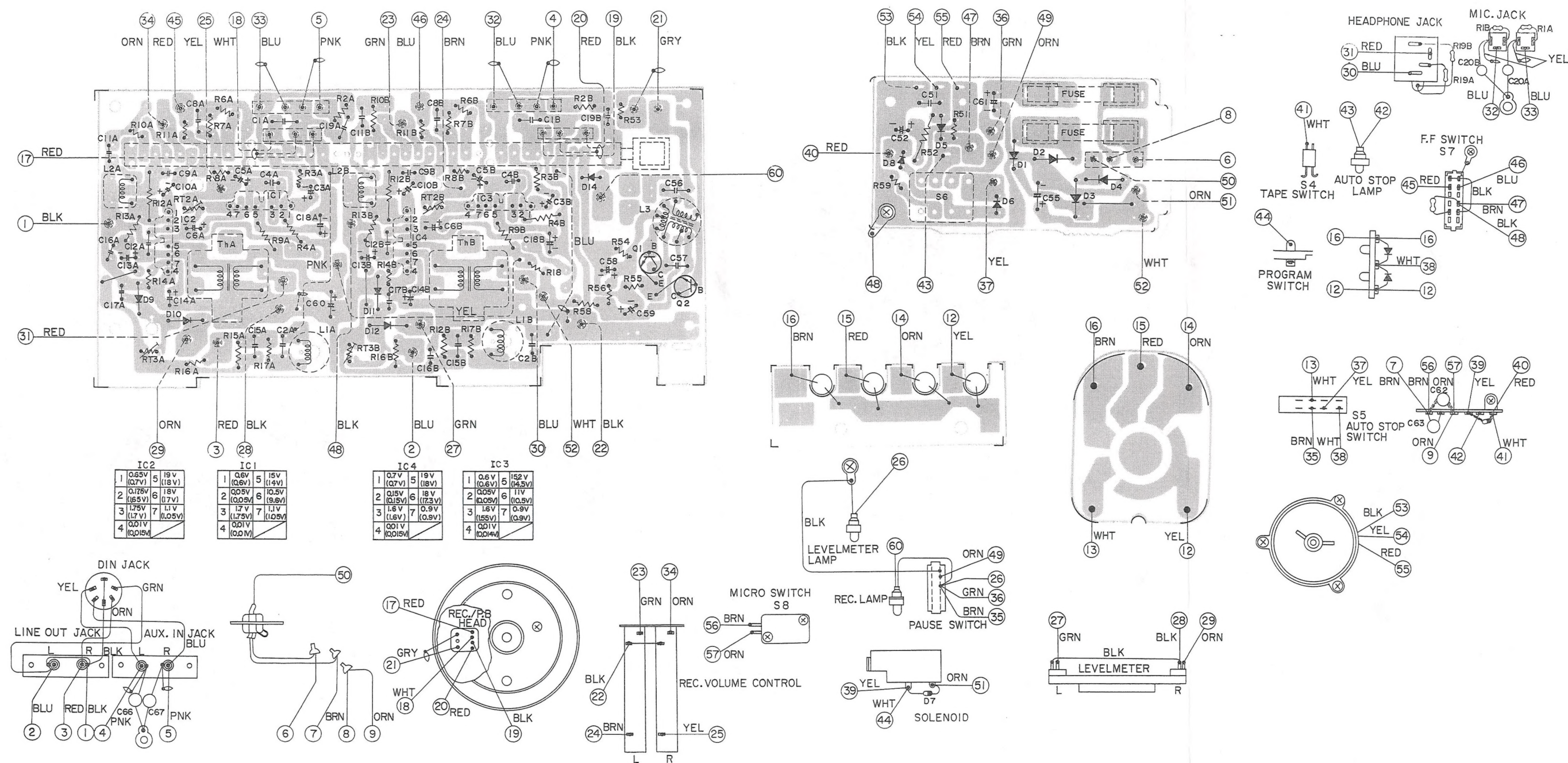
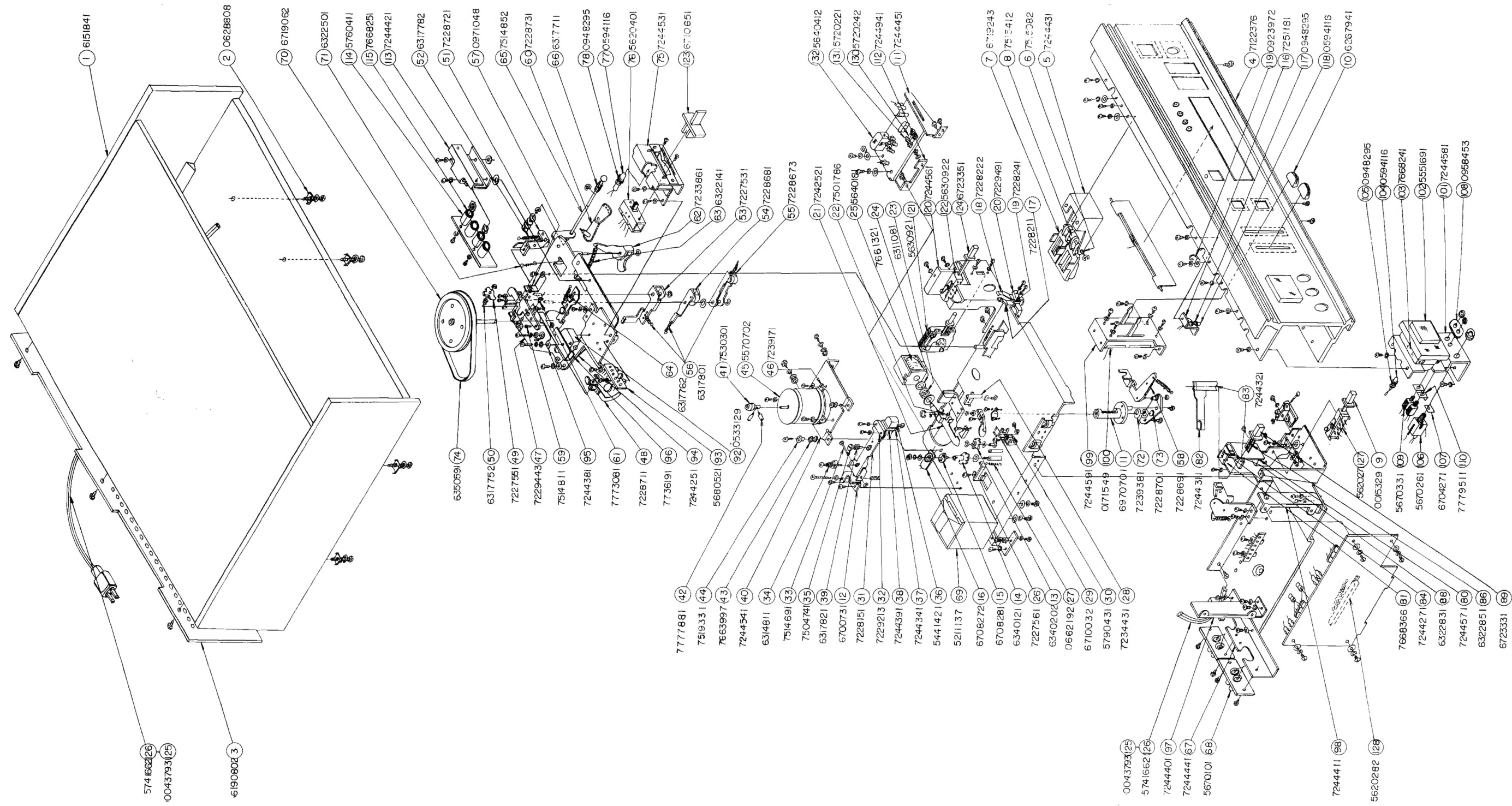


Fig. 18



DISASSEMBLED DIAGRAM



REPLACEMENT PARTS

Symbol No.	Stock No.	Description			Symbol No.	Stock No.	Description		
CAPACITORS:									
C2A,B	0248720	Ceramic, discal	68pF \pm 10%	25V	D 8	5330341	Diode	WO-6A	
C3A,B	0252613	Electrolytic	3.3 μ F		D 9	0575001	Diode	1N34A	Ge 455KHz
C4A,B	0248730	Ceramic, discal	180pF \pm 10%		D 10	0575001	Diode	1N34A	Ge 455KHz
C5A,B	0252613	Electrolytic	3.3 μ F	25V	D 11	0575001	Diode	1N34A	Ge 455KHz
C6A,B	0252525	Electrolytic	47 μ F	16V	D 12	0575001	Diode	1N34A	Ge 455KHz
C7A,B	0276111	Mylar	0.1 μ F \pm 20%		D 13	5330104	Diode	VO-6A	
C8A,B	0275111	Mylar	0.01 μ F \pm 20%		D 14	5330341	Diode	WO-6A	
C9A,B	0274111	Mylar	0.001 μ F \pm 20%		D 15	5330341	Diode	WO-6A	
C10A,B	0252613	Electrolytic	3.3 μ F	25V	D 16	5330341	Diode	WO-6A	
C11A,B	0275113	Mylar	0.022 μ F \pm 20%		COILS:				
C12A,B	0248724	Ceramic, discal	100pF \pm 10%	25V	L1A,B	5270001	Variable	33mH	
C13A,B	0252615	Electrolytic	4.7 μ F	25V	L2A,B	5120303	Trap	18mH	
C14A,B	0252231	Electrolytic	100 μ F	6.3V	for Final assembly				
C15A,B	0243511	Ceramic, discal	680pF \pm 10%		(1)	6151841	Cabinet		
C16A,B	0275111	Mylar	0.01 μ F \pm 20%		(2)	8711416	Pan head screw-3mm ϕ \times 16mm		
C17A,B	0274113	Mylar	0.0022 μ F \pm 20%			0628808	Locking washer		
C18A,B	0252531	Electrolytic	100 μ F	16V		8813124	Spring washer-3mm ϕ		
							(5 req'd) for chassis ass. mounting		
C 51	0244171	Ceramic, discal	0.022 μ F \pm 80% -20%	25V	(3)	6190802	Back cover		
C 52	0252623	Electrolytic	33 μ F	25V		8755410	Wood screw-3.1mm ϕ \times 10mm		
							(3 req'd) for back cover mounting		
C 55	0256098	Electrolytic	470 μ F	50V	(4)	7122376	Panel mounting assembly		
C 56	0275016	Mylar	0.0068 μ F \pm 10%		(5)	7244431	Push button holder		
C 57	0221381	Styrol	4700pF \pm 10%		(6)	7515082	Push button shaft		
C 58	0252231	Electrolytic	100 μ F	6.3V	(7)	6719243	Push button assembly		
C 59	0252631	Electrolytic	100 μ F	25V	(8)	7515412	Push button collar		
C 60	0256074	Electrolytic	1000 μ F	25V		0631443	"E" ring		
C 61	0256074	Electrolytic	1000 μ F	25V			for push button shaft mounting		
RESISTORS:						7771873	Screw with spring washer-3mm ϕ		
R1A,B	0137807	Carbon film	330 Ω \pm 10%	1/4SD		8811114	Washer-3mm ϕ		
R2A,B	0137907	Carbon film	33k Ω \pm 10%	1/4SD			(2 req'd) for push button ass. mounting		
R3A,B	0137801	Carbon film	100 Ω \pm 10%	1/4SD	(9)	0015329	Switch button (pause)		
R4A,B	0137802	Carbon film	120 Ω \pm 10%	1/4SD	(10)	6267941	Slide control knob		
							(2 req'd) for record/volume knob		
R6A,B						7771873	Screw with spring washer-3mm ϕ		
R7A,B	0137953	Carbon film	150k Ω \pm 10%	1/4SD			(14 req'd) for chassis, panel mounting		
R8A,B	0137902	Carbon film	12k Ω \pm 10%	1/4SD	for Chassis assembly				
R9A,B	0137856	Carbon film	2.7k Ω \pm 10%	1/4SD	(11)	6970701	Flywheel metal		
R10A,B	0137770	Carbon film	82 Ω \pm 10%	1/4SD		8721406	Flat screw-3mm ϕ \times 6mm (1 req'd)		
R11A,B	0137806	Carbon film	270 Ω \pm 10%	1/4SD		7771873	Screw with spring washer-3mm ϕ (2 req'd)		
R12A,B	0114446	Carbon film	270 Ω \pm 10%	1/4SD			for FW metal mounting		
R13A,B	0137903	Carbon film	15k Ω \pm 10%	1/4SD	(12)	6700731	Hanger washer for head shifting plate		
R15A,B	0137909	Carbon film	47k Ω \pm 10%	1/4SD			mounting		
R16A,B	0137856	Carbon film	2.7k Ω \pm 10%	1/4SD	(13)	6340202	Head shifting cam		
R17A,B	0137853	Carbon film	1.5k Ω \pm 10%	1/4SD		0637445	"E" ring		
R18	0137812	Carbon film	820 Ω \pm 10%	1/4SD			for head shifting cam mounting		
R19A,B	0137758	Carbon film	8.2 Ω \pm 10%	1/4SD	(14)	6340121	Channel gear		
R20	0134281	Composition	2.2 Ω \pm 10%	1/2GF	(15)	6708281	Spring holder assembly		
R21	0134281	Composition	2.2 Ω \pm 10%	1/2GF			for channel gear mounting		
R51	0137901	Carbon film	10k Ω \pm 10%	1/4SD		7710421	Fiber washer-5mm ϕ		
R52	0134294	Composition	27 Ω \pm 10%	1/2GF			for spring holder ass. mounting		
R53	0137801	Carbon film	100 Ω \pm 10%	1/4SD	(16)	6708272	Channel P.C.B assembly		
R54	0137857	Carbon film	3.3k Ω \pm 10%	1/4SD					
R55	0137768	Carbon film	56 Ω \pm 10%	1/4SD		8811114	Washer-3mm ϕ		
R56	0137905	Carbon film	22k Ω \pm 10%	1/4SD		8813124	Spring washer-3mm ϕ		
R57	0137765	Carbon film	33 Ω \pm 10%	1/4SD		8821114	Nut-3mm ϕ		
R58	0137763	Carbon film	22 Ω \pm 10%	1/4SD			for channel P.C.B mounting		
R V 2	0151817	Semi variable	20k Ω (B)		(17)	7228211	Earth plate		
R V 3	0151360	Semi variable	5k Ω (B)		(18)	7228222	Switch plate		
R V 4	0151817	Semi variable	20k Ω (B)		(19)	7228241	Insulating plate (1) for earth plate		
R V 5	0151330	Semi variable	5k Ω (B)		(20)	7229491	Insulating plate (2) for switch plate		
TRANSISTORS:							for program selector		
T R 1	5320612		2SC1213B			7771874	Screw with spring washer-3mm ϕ		
T R 2	5320612		2SC1213B				(2 req'd) for earth plate, switch plate,		
I C 1	5353081	IC	FA6013D				insulating plate (1) (2) mounting		
I C 2	5353081	IC	FA6013D			8781438	Tapping screw-3mm ϕ \times 8mm		
I C 3	5353081	IC	FA6013D				for spring holder ass. mounting		
I C 4	5353081	IC	FA6013D		(21)	7242521	Push plate		
D 1	5330104	Diode	VO-6A			0637443	"E" ring for push plate shaft mounting		
D 2	5330104	Diode	VO-6A		(22)	7501785	Push plate shaft		
D 3	5330104	Diode	VO-6A		(23)	6311081	Plunger spring		
D 4	5330104	Diode	VO-6A			7711272	Fiber washer-10mm ϕ (2 req'd)		
D 5	5330341	Diode	WO-6A			7771381	Mylar washer		
D 6	5330341	Diode	WO-6A				for push plate mounting		
D 7	5330341	Diode	WO-6A		(24)	7661321	Plunger absorbing shock rubber		

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Symbol No.	Stock No.	Description	Symbol No.	Stock No.	Description
(25)	5640181 7771871	DC solenoid Screw with spring washer-3mm \varnothing (2 req'd) for solenoid mounting	(62)	7233861 0637445	Pressure lever function bar "E" ring for pressure lever function bar mounting
(26)	7227561 8781438	Push plate guide Tapping screw-3mm \varnothing \times 8mm for push plate guide mounting	(63)	6322141	Pressure spring
(27)	0662192	Push plate spring	(64)	6317762	Retune spring
(28)	7234431	Tape guide	(65)	7514852	Eject rod
(29)	6710032	Tape guide plate	(66)	6317711 0637445	Rod spring "E" ring for rod spring mounting
(30)	5790431 0711308 8812113 8813123	Track switch connector Pan head screw-2.6mm \varnothing \times 8mm Washer-2.6mm \varnothing Spring washer-2.6mm \varnothing for track switch connector mounting	8721405	Flat screw-3mm \varnothing \times 6mm (1 req'd)	}
	8781438	Tapping screw-3mm \varnothing \times 8mm for tape guide mounting	7771872	Screw with spring washer-3mm \varnothing \times 5mm (1 req'd)	
(31)	7228151	Head shifting plate assembly	7771873	Screw with spring washer-3mm \varnothing (2 req'd) for mecha plate mounting	}
(32)	7229213	Head adjust plate assembly	(67)	7244441	
(33)	7514691 0637443	Head shifting plate shaft "E" ring for head shifting plateshaft mounting	(68)	5670101 8781438	2P pin jack (2 req'd) for jack holder mounting Tapping screw-3mm \varnothing \times 8mm (4 req'd) for 2P pin jack mounting
(34)	6314811	Head shifting plate spring for head adjust plate mounting	7771873	Screw with spring washer-3mm \varnothing (2 req'd) for jack holder mounting	
(35)	8745432	Binding screw-3mm \varnothing \times 32mm	(69)	5211137 7771873	Power transformer Screw with spring washer-3mm \varnothing (3 req'd) for power transformer mounting
(36)	7504741	adjust screw assembly	(70)	6719062	Flywheel assembly
(37)	5441421	Head	(71)	6322501 0638399	Pressure return spring "E" ring for flywheel mounting
(38)	7244341 7244391 8711408	Head holder Head plate Pan head screw-3mm \varnothing \times 8mm for head mounting	(72)	7239381	Flywheel washer for flywheel mounting
	7771871	Screw with spring washer-3mm \varnothing (2 req'd) for head holder mounting	(73)	7228701 8781438	Thrust sheet assembly Tapping screw-3mm \varnothing \times 8mm (2 req'd) for metal plate mounting
(39)	8781438	Tapping screw-3mm \varnothing \times 8mm (2 req'd) for head adjust holder ass. mounting	(74)	6350591	Belt for flywheel
	6317821	Adjust spring for head adjust holder assembly mounting	(75)	7244531	Button holder assembly
	8745425	Binding screw-3mm \varnothing \times 25mm for adjust spring mounting	(76)	5620401	Slide switch for button holder mounting (Auto stop)
	8811114	Washer-3mm \varnothing for adjust spring mounting	0721304	Flat screw-2.6mm \varnothing \times 4mm (2 req'd) for slide switch mounting	
(40)	7244541	Motor supporting plate	(77)	0594116	Pilot lamp
(41)	7530301	Motor pulley	(78)	0948295	Rubber plate for pilot lamp mounting
(42)	7777881 8781442	Set screw for motor pulley mounting Tapping screw-3mm \varnothing \times 12mm (3 req'd) for motor supporting plate mounting	(79)	7244521 7771871 8781438	Jack holder Screw with spring washer-3mm \varnothing (1 req'd) Tapping screw-3mm \varnothing \times 8mm (2 req'd) for jack holder mounting
(43)	7663997	Rubber plate-8mm \varnothing (4 req'd)	(80)	7244571	Recording holder
(44)	7519331 7771873	Collar (3 req'd) Screw with spring washer-3mm \varnothing (3req'd) for motor mounting	(81)	7668366	Rubber pad
(45)	5570702	Motor	(82)	7244311	Recording spring assembly
(46)	7239171 8781438	Motor bracket Tapping screw-3mm \varnothing \times 8mm for motor bracket mounting	(83)	7244321	Recording function plate
(47)	7229443	Mecha plate assembly	(84)	7244271	Lock plate (1)
(48)	7228711 0637443	Engagement lever assembly "E" ring for engagement lever ass. mounting	(85)	7244281	Lock plate (2)
(49)	7227551	Nock lever	(86)	6322851	Stop spring
(50)	6317752 0637443	Nock lever spring "E" ring for nock lever mounting	(87)	6322841	Play spring
(51)	7228721 7771871	Lock guide assembly Screw with spring washer-3mm \varnothing (2 req'd) for lock guide ass. mounting	(88)	6322831	Lock plate spring
(52)	6317782	Lock spring	(89)	6723331	Recording button (red)
(53)	7227531 0637445	Nock function lever "E" ring for nock function lever mounting	(90)	6723332 7771873	Recording button Screw with spring washer-3mm \varnothing (6 req'd) for button holder ass, recording holder ass. mounting
(54)	7228681	Nock function lever assembly	(91)	6322861	Recording spring
(55)	7228673 0637445 0637119	Pressure lever assembly "E" ring } for nock function lever assembly Fiber washer } pressure lever mounting	(92)	0533129	Micro switch for power
(56)	6317801	Nock function spring	(93)	5680521	4P terminal for switch holder
(57)	0971048	Brake rubber	(94)	7244251	Switch supporting plate
(58)	7228691	Flywheel lever assembly	(95)	7244381	Switch lever
(59)	7514811 0637442	Engagement pin "E" ring for engagement pin mounting	(96)	7736191 7771871	Insulating plate for micro switch Screw with spring washer-3mm \varnothing for switch supporting plate 2P terminal mounting
(60)	7228731	Pressure function lever assembly	8711416	Pan head screw-3mm \varnothing \times 16mm	}
(61)	7773081	Set screw for FW lever, FW lever shaft mounting	8813124	Spring washer-3mm \varnothing	
			8811114	Washer-3mm \varnothing for micro switch, switch lever mounting	(2 req'd)
			(97)	7244401	P.C.B holder (1) for left
			(98)	7244411	P.C.B holder (2) for right
			7771873	Screw with spring washer-3mm \varnothing (8 req'd) for P.C.B holder (1), (2) mountig	
			8811114	Washer-3mm \varnothing (4 req'd) for P.C.B mounting	
			(99)	7244591	Volume holder
			RV1A,B (100)	0171549	Variable resistor (2 req'd) for volume holder

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Symbol No.	Stock No.	Description	Symbol No.	Stock No.	Description
	7771871	Screw with spring washer-3mm \varnothing (4 req'd) for volume holder mounting	(118)	0594116	Pilot lamp for panel
(101)	7244581	Microphon jack holder	(119)	0923972	Staple (4 req'd) for micro switch, mecha plate, chassis, P.C.B
(102)	5551691	Level meter	(120)	7244561	Panel holder
(103)	7668241	Level meter cushion		8781438	Tapping screw-3mm \varnothing \times 8mm (2 req'd) for panel holder mounting
(104)	0594116	Pilot lamp for level meter illumination	(121)	5630921	Push switch (under) (power) (for USA)
(105)	0948295	Rubber plate for pilot lamp mounting		7771852	Screw with spring washer-2.6mm \varnothing (2 req'd) for push switch mounting
(106)	5670261	Headphone jack	(122)	5630922	Push switch (upper) (FF)
(107)	6704271	Insulating washer for headphone jack mounting		7771871	Screw with spring washer-3mm \varnothing (2 req'd) for push switch mounting
(108)	0958453	Jack washer	(123)	6710651	Switch control knob
(109)	5670331	Mould jack (2 req'd) for record	(124)	6723351	FF button
(110)	7779511	Polyester washer for mould jack mounting	(125)	0043793	Bushing for power cord
(111)	7244451	P.C.B holder(3) for front	(126)	5741662	Power cord
(112)	7244941	P.C.B holder (4) for rear			for Printed circuit board assembly
	7771871	Screw with spring washer-3mm \varnothing for P.C.B holder (4) mounting	S 2(127)	5620271	Slide switch (Pause)
	8781438	Tapping screw-3mm \varnothing \times 8mm (3 req'd) for P.C.B holder (3), (4) mounting	S 1(128)	5620282	Slide switch (Rec./PB)
	7771873	Screw with spring washer-3mm \varnothing (2 req'd) for P.C.B mounting		5250043	Headphone transformer
	8811114	Washer-3mm \varnothing (2 req'd) for P.C.B mounting	F (130)	5720242	Fuse
(113)	7244421	Lamp holder	(131)	5720221	Fuse holder
(114)	5760411	Pilot lamp (4 req'd) for program indication	(132)	5640412	Relay
(115)	7668251	Lamp rubber plate		7716481	Head cleaning stack
	7771871	Screw with spring washer-3mm \varnothing (4 req'd) for lamp holder, lamp P.C.B mounting		5740543	Patch cord
(116)	7251181	Lamp holder		5260025	Oscillator coil
(117)	0948295	Rubber plate for pilot lamp mounting			



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